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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,233	04/28/2006	Dieter Willbold	23518	1858

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EXAMINER	
YOUNG, HUGH PARKER	
ART UNIT	PAPER NUMBER
1654	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/570,233	WILLBOLD ET AL.	
	Examiner	Art Unit	
	Hugh P. Young	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 2/28/07
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is the first Office action on application 10,570,233. There are nine claims pending, all of which are currently under consideration.

Objections to the Specification

1. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: a) Use of the abbreviation/acronym "TSE" in the first sentence. The root term of any acronym should be recited in full the first time it is used in any part of an application, followed by the abbreviation/acronym in parentheses, after which the abbreviated term may be used. b) The grammar of the sentences in the paragraph beginning on line 18 of page 2 renders them unclear. c) There is a broken sentence on page 9, lines 21-22 as well as a misspelling of the word "chromosome" on page 9, line 9. d) The recitation of peptide pairs and groups starting on page 3, line 13 through page 6, line 17 is unclear as to what information is being disclosed as well as what bearing the information has on the invention. e) The terms "healing" and "enrich" are used throughout the disclosure without adequate definition. The term "agent" is not defined and is ambiguous in that it is not clear if it is intended to be a synonym for "peptide" or is referring to a composition comprising a peptide. The terms "modified" and "modification" are used in line 16 and 18, respectively, on page 14 to describe use of several chemical components to improve the claimed peptides

without defining what the modifications comprise or how the modifications are to be done. f) The peptide amino acid sequences disclosed are referred to as "sequence number" instead of the required "SEQ ID NO:" which is used in the paper and electronic forms of the sequence listing.

Objections to the Claims

2. Claim 1 is objected to because of the following informalities: The peptide sequence claimed is recited as "sequence number 1" instead of the required "SEQ ID NO: 1." Appropriate correction is required.

3. Claims 2-4 are objected to because of the following informalities: The invention claimed is a composition that comprises a peptide, rather than peptide per se. A peptide itself cannot comprise anything else other than an amino acid subsequence. Appropriate correction is required.

4. Claim 9 is objected to because of the following informalities: claim 9 uses the abbreviation "TSE" without the term being spelled out in full either in the claim itself or in a preceding claim.

5. Claim 9 uses the term "enriched" to refer to a use of a peptide without adequate definition of the term. Appropriate correction is required.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The claimed invention is directed to non-statutory subject matter. In the instant case claims 1 and 7 claim a peptide according to a disclosed sequence of amino acids, but without explicitly stating that the peptide is isolated, synthesized or grown by recombinant technology. Without an indication that the hand of man is used to obtain the peptide, the peptide is indistinguishable from a product of nature and is therefore nonstatutory subject matter.

8. Claim 8 provides for the use of the peptide of claim 1 for producing a pharmaceutical, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 8 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Regarding claim 4, the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. Similarly, the term "like" renders the claim indefinite because it is unclear whether the limitation(s) following the term are part of the claimed invention. See MPEP § 2173.05(d).

11. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the instant case claim 5 recites the terms "modified or substituted" without defining them. It is not clear as to whether applicant is claiming substitution of amino acids in the peptide chain, modifications of them, or modifying the amino acid side chains or incorporating additional amino acids onto the terminal ends of the peptide.

12. Claim 6 recites the limitation "agent" in its claim of a method of making an agent according to claim 1. There is insufficient antecedent basis for this limitation in the claim. None of the preceding claims recite the term "agent" and claim 1, from which claim 6 depends, claims a peptide. The lack of a clear antecedent basis for the term "agent" leaves it unclear as to whether applicant is claiming a method of making a peptide or a method of making a composition which comprises a peptide.

13. Claim 7 recites the limitation "agent" in its claim of a method of making an agent according to claim 1. There is insufficient antecedent basis for this limitation in the claim. None of the preceding claims recite the term "agent" and claim 1, from which claim 7 depends, claims a peptide. The lack of a clear antecedent basis for the term

"agent" leaves it unclear as to whether applicant is claiming a method of making a peptide or a method of making a composition that comprises a peptide.

14. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

15. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. IN the instant case applicant claims that the invention will prevent or treat transmissible spongiform encephalitis (TSE), a claim that is not supported by the disclosure.

In this regard, the application disclosure and claims have been compared per the factors indicated in the decision *In re Wands*, 8 USPQ2d 1400 (Fed. Cir., 1988) as to undue experimentation. Each factor is addressed below on the basis of comparison of the disclosure, the claims and the state of the prior art in the assessment of undue experimentation. The factors follow:

1. *the nature of the invention*;

The invention provides for the use of a dodecapeptide of SEQ ID NO: 1 as an agent to be used as a pharmaceutical composition for humans and mammals exposed to the causative agent of transmissible spongiform encephalopathy (TSE).

2. *the breadth of the claims*;

Claim 9 claims methods of using the claimed dodecapeptide for the treatment, healing and prevention of transmissible spongiform encephalopathy.

3. *the predictability or unpredictability of the art*;

The art in regards the spongiform encephalopathies, or prion-associated disorders, is unpredictable. Soto, 2006, (Prions: The New Biology of Proteins, CRC Taylor & Francis Group) states in the preface that "(TSEs), also known as prion-related diseases, are a group of infectious, fatal neurodegenerative disorders for which there is not cure, treatment or early diagnosis." Soto further states that "Because of insufficient information available regarding the incubation time and the actual level of exposure to the contaminated material, it is impossible to make any well-founded prediction about the future of this nascent epidemic." Again, in section 2.3 of Chapter Two (page 18) Soto emphasizes that in spite of accumulating evidence that prion proteins are the causative agent of TSE, there are notable weaknesses to this line of argument, especially in regards the existence of multiple "strains" of proteins from a variety of mammalian sources which are unpredictable in transmissibility and etiology, both intra-specifically and cross-species. These factors are further elaborated by Soto in Chapter Five, as summarized in the Concluding remarks in section 5.4, in which Soto states that there are "still many open questions" regarding the transmissibility of the disease. Finally, in Chapter Nine, Soto alludes to the potential for reversing PrPSc conformation (section 9.1.5), as well as other treatment mechanisms in subsequent sections of chapter nine, these are speculative. Most telling is Soto's concluding remarks, section

9.4, in which he states "Unfortunately, little progress has been made in finding new efficient therapies for these devastating diseases."

4. *the amount of direction or guidance presented*;

The instant disclosure provides little direction and only one example of the use of the invention. Other than recitation of standard formulary practices and compositions, no guidance is given as to how to determine what dose level or route or mode of application to a subject would be suitable, nor is a best mode disclosed. No guidance is given as to how to assess subjects or patients as to the severity of infection or likelihood of successful treatment, whatever the mode used.

5. *the presence or absence of working examples*;

There is but one example provided in the disclosure. Page 18 of the Specification recites an in vitro experiment in which infected cells were contacted with the claimed peptide and analysis of the subsequent cell lysate indicated that presence of aberrant proteins was reduced compared to the control samples. No whole-animal laboratory model or clinical studies are provided to indicate what success one would expect if one were to practice the invention on whole organisms. Fate of the invented peptide, once introduced into a live subject, is not disclosed.

6. *the quantity of experimentation necessary*;

In light of items 1 – 5 above, there would be a relatively large amount of experimentation required in order to successfully use the dodecapeptide as claimed. Soto, as cited above, states that as of 2006 even pre-mortem diagnoses of TSE and related disorders is problematic and uncertain. Peptides are biologically active, labile molecules and their fate and disposition within a whole animal is inherently uncertain, and applicant has not provided any indication as to the success one would have in delivering an effective dose of the peptide to the target cells, especially in light of the fact that the target cells, afflicted brain cells, are behind the blood-brain barrier.

7. *the state of the prior art;* and,

The recent review by Soto, cited herein, emphasizes that the main achievement in the field of prion/TSE research to date (2006) has been to establish that misfolded proteins, or prions, are the most likely causative agent of the prion-related diseases. Beyond that, the prospects of even arriving at reliable diagnoses are uncertain and riddled with problems and treatment, let alone prevention, is as yet unknown.

8. *the relative skill of those skilled in the art;*

In view of the discussion of each of the preceding seven factors the level of skill in this art is high and is at least that of a medical doctor or Ph.D. in neuropathology with several years of experience in the art. As the cited art would point to, even with a level of skill in the art which is very high, predictability of the results is not invariable.

In consideration of each of factors 1 - 8, it is apparent that there is undue experimentation because of variability in prediction of outcome that is not addressed by the present application disclosure, examples, teaching, and guidance presented. Absent factual data to the contrary, the amount and level of experimentation needed is undue.

Conclusion

16. The peptide sequence of SEQ ID NO: 1, LKATTNSKLMMY, is free of the art and is allowable. Claim 1, which claims the sequence, should be rewritten to address the rejection supra. U.S. Patent No. 5,866,363, issued to G. Pieczenik Feb. 2, 1999, claims (claims 36 and 46) populations of dodecapeptides obtained by expression of recombinant vectors in *E. coli* which are large and broadly generic and do not anticipate the specific peptide, LKATTNSKLMMY, SEQ ID NO: 1 of the instant claim 1.

17. No claims are allowed.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hugh P. Young whose telephone number is (571)-272-4988. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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GAU 1654

JON WEBER
SUPERVISORY PATENT EXAMINER